

**Virginia Department of Environmental Quality**

**Draft Hazardous Waste Management Permit  
for Corrective Action**

**Polynt Composites USA, Inc.  
Chatham, Virginia**

**EPA ID No: VAD055046049**

**June 16, 2017**



# COMMONWEALTH of VIRGINIA

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Secretary of Natural Resources

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## Hazardous Waste Management Permit for Corrective Action

Permittee: **Polynt Composites USA, Inc.**  
**920 Tightsqueeze Industrial Road**  
**Chatham, Virginia 24531**

EPA ID No.: **VAD055046049**

Pursuant to Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, and regulations promulgated thereunder by the Virginia Department of Environmental Quality (DEQ), a Hazardous Waste Management Permit is issued to the Polynt Composites USA, Inc. (hereinafter referred to as the Permittee), located in Chatham, Virginia to conduct Corrective Action (CA), as necessary to protect human health and the environment, for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU) or Area of Concern (AOC). The facility being permitted is located at 920 Tightsqueeze Industrial Road in Chatham, Virginia, and has a geographic location at 36° 46' 29" North latitude and 079° 29' 49" West longitude.

The Permittee shall comply with all terms and conditions set forth in this Permit including Permit Attachments A through C. If the Permit and the Permit Attachments conflict, the wording of the Permit shall prevail. The Permittee shall also comply with all applicable regulations contained in the Virginia Hazardous Waste Management Regulations (VHWMR) as codified in Title 9 of the Virginia Administrative Code, Agency 20, Chapter 60 (9 VAC 20-60) and the *Resource Conservation and Recovery Act* (RCRA) Regulations under in 40 CFR Parts 124, 260, 261, 262, 264, 265, 268, and 270, as adopted by reference in the VHWMR. (For convenience, wherever the RCRA Regulations are adopted by reference and cited in this Permit and the Permit Attachments, the regulatory citations will be only those from 40 CFR).

The Commonwealth of Virginia has received authorization for its hazardous waste program under Section 3006(b) of the RCRA, 42 U.S.C. § 6926(b), to administer and enforce the RCRA under the VHWMR in lieu of the federal hazardous waste management program. Applicable regulations are those under the VHWMR (9 VAC 20-60) and the RCRA which are in effect on the date of final administrative action on this Permit and as well as any self-implementing statutory provisions and related regulations which are automatically applicable to the Permittee's hazardous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based on the administrative record and the assumption that the information submitted by the Permittee and contained in the administrative record is complete and accurate. The

Permittee's failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the modification or termination of this Permit pursuant to 40 CFR § 124.5, § 270.41, §270.42, and § 270.43, and shall also be grounds for initiation of an enforcement action. The Permittee shall inform the Department of any deviations from permit conditions or changes in the information provided in the application. In particular, the Permittee shall inform the Department of any proposed changes that might affect the ability of the Permittee to comply with applicable regulations and/or permit conditions, or which alter any of the conditions of the Permit in any way.

This Permit is effective as of \_\_\_\_\_, and shall remain in effect until \_\_\_\_\_, unless revoked and reissued in accordance with 40 CFR § 124.5 and § 270.41, or terminated in accordance with 40 CFR § 270.43, or continued in accordance with VHWMR 9 VAC 20-60-270.B.15.

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Date Signed

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Leslie A. Romanchik  
Hazardous Waste Program Manager  
Office of Financial Responsibility and  
Waste Programs

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### **LIST OF ATTACHMENTS**

The following Attachments are incorporated, in their entirety, by reference into this Permit. These incorporated attachments are enforceable conditions of this Permit. The DEQ has, as deemed necessary, modified specific language from the permit application. Additional modifications are prescribed in the Permit conditions (Modules I and II), and thereby supersede the language of the Attachments to the extent that there is a direct conflict between the Attachments and Modules I and II of the Permit.

#### **ATTACHMENT A**

*FACILITY MAPS AND FIGURES* ..... A-1

#### **ATTACHMENT B**

*FACILITY BACKGROUND, SWMUS AND AOCS, AND ENVIRONMENTAL HISTORY* ..... B-1

#### **ATTACHMENT C**

*REMEDIAL CLEAN-UP TARGETS* ..... C-1

## **DEFINITIONS**

All definitions contained in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, 264.1031, 264.1051, 264.1081, and 9 VAC 20-60 are hereby incorporated, in their entirety, by reference into this Permit. Any of the definitions used below, (a) through (l), shall supersede any definition of the same term given in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, 264.1031, 264.1051, 264.1081, and 9 VAC 20-60. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

Throughout the permit, all references to 40 CFR parts 261-266, 268, 270, 273, 279, are as adopted by reference in the Virginia Hazardous Waste Management Regulations, 9 VAC 20-60.

- a. The term "**Permit**" shall mean the Permit issued by the Virginia Department of Environmental Quality, pursuant to Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, and the Virginia Hazardous Waste Management Regulations (VHWMR) as codified in Title 9 of the Virginia Administrative Code, Agency 20, Chapter 60 (9 VAC 20-60).
- b. The term "**Director**" shall mean the Director of the Virginia Department of Environmental Quality or his designated representative.
- c. The term "**Department**" shall mean the Virginia Department of Environmental Quality (DEQ), (with the address as specified in Permit Condition I.I.4).
- d. The terms "**facility**" or "**site**" shall mean all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. For the purpose of implementing corrective action under 40 CFR § 264.101, "facility" means all contiguous property under the control of the owner or operator under a permit under Subtitle C of RCRA. The Polynt Composites USA, Inc. facility in Chatham, Virginia, is identified in the physical description of the property (including structures, appurtenances, and improvements). This property description is as set forth in Attachment A of this Permit.
- e. The term "**hazardous waste management unit**" is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include a surface impoundment, a waste pile, a land treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed.
- f. The term "**release**" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.
- g. The term "**Area of Concern**" shall mean an area at the facility or an off-site area, which is not at this time known to be a solid waste management unit, where hazardous waste and/or hazardous constituents are present or are suspected to be present as a result of a release from the facility.

- h. The term “**Hazardous Constituent**” shall mean a constituent that is listed in 40 CFR Part 261, Appendix VIII.
- i. The term “**Permittee**” shall mean the owner/operator of the facility to which the Permit is issued.
- j. The term “**EPA**” shall mean United States Environmental Protection Agency.
- k. The term “**Solid Waste Management Unit**” shall mean any discernable unit at the facility from which hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid and/or hazardous wastes. Such units include any area at a facility which solid wastes have been routinely and systematically released. The term “unit” refers to containers, container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, underground injection wells, and other physical, chemical, and biological units or treatment units.
- l. The term “**Days**” shall mean calendar days except as otherwise provided herein.

## **MODULE I- STANDARD CONDITIONS**

### **I.A EFFECT OF PERMIT**

#### **I.A.1 Permit**

This Permit, issued by the Director pursuant to 40 CFR § 270.1(c)(4), authorizes only the management of hazardous waste under Corrective Action (CA) expressly described in this Permit and in accordance with the conditions of this Permit and with the applicable provisions of the VHWMR under 9 VAC 20-60. Any management of hazardous waste by the Permittee which is not authorized by this Permit or 9 VAC 20-60, and for which a permit is required under Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, is prohibited. (40 CFR §§ 270.30(g) and 270.4(b) and (c)) Compliance with this Permit generally constitutes compliance, for the purposes of enforcement, with Chapter 14, Article 4, Title 10.1-1426, Code of Virginia (1950), as amended. This Permit does not convey any property rights of any sort, or any exclusive privilege. Possession of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of Commonwealth of Virginia or local laws or regulations. Compliance with the terms of this Permit may not constitute a defense to any action brought under Chapter 14, Article 8, Code of Virginia (1950), as amended, or any other Commonwealth law governing protection of the public health or the environment.

#### **I.A.2 CA Obligations**

The Permittee is obligated to complete facility-wide CA under the conditions of a RCRA Permit regardless of the operational status of the facility. The Permittee must submit an application for a new Permit at least 180-days before this Permit expires pursuant to 40 CFR § 270.10(h), unless the Permit has been modified to terminate the CA schedule of compliance and the Permittee has been released from the requirements for financial assurance for corrective action.

### **I.B PERMIT ACTIONS**

#### **I.B.1 Permit Actions**

This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§ 124.5, 270.30(f), 270.41, 270.42, and 270.43. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance does not stay the applicability or enforceability of any permit condition (40 CFR § 270.30(f)).

#### **I.B.2 Permit Modifications**

Permit modifications at the request of the Permittee shall be done as specified by 40 CFR § 270.42.

#### **I.B.3 Renewal**

This Permit may be renewed as specified in 9 VAC 20-60-270.B.6. and 40 CFR § 270.10(h), and permit condition I.D.2. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

### **I.C SEVERABILITY**



**I.C.1 Provisions**

The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any Commonwealth or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other Commonwealth or Federal statutory or regulatory basis for said condition. (40 CFR § 124.16(a)(2)).

**I.C.2 Permit is Stayed**

In the event that a condition of this Permit is stayed for any reason, the Permittee shall continue to comply with the conditions of the existing permit which correspond to the stayed conditions until final resolution of the stayed condition unless the Director determines compliance with the related applicable and relevant standards would be technologically incompatible with compliance with other conditions of this Permit which have not been stayed (40 CFR §124.16(c)(2)).

**I.D DUTIES AND REQUIREMENTS**

**I.D.1 Duty to Comply**

The Permittee shall comply with all conditions of this Permit, except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration such noncompliance is authorized by an emergency permit under 40 CFR § 270.61. Any other noncompliance with the Permit constitutes a violation of Title 10.1 Code of Virginia (1950), as amended, and regulations promulgated thereunder is grounds for enforcement action, Permit termination, revocation and reissuance, modification, or denial of a Permit renewal application. (40 CFR § 270.30(a))

**I.D.2 Duty to Reapply**

If the Permittee wishes to or is required to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee shall apply for and obtain a new permit as specified below.

- a. The Permittee shall submit a new and complete permit application for a new Permit at least 180 days before the Permit expires, unless a later date has been approved by the Director (40 CFR § 270.30(b)) .
- b. Pursuant to 40 CFR § 270.10(h), the Director shall not grant permission for an application to be submitted later than the expiration date of the existing permit.

**I.D.3 Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for the Permittee in an enforcement action to argue that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit (40 CFR § 270.30(c)).

**I.D.4 Duty to Mitigate**

In the event of noncompliance with the Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment (40 CFR § 270.30(d)).

**I.D.5 Proper Operation and Maintenance**

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit (40 CFR § 270.30(e)).

**I.D.6 Duty to Provide Information**

The Permittee shall furnish to the Director within a reasonable time, any pertinent information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit (40 CFR § 270.30(h)).

**I.D.7 Inspection and Entry**

The Permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under conditions of this Permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- d. Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the VHWMR, any substances or parameters at any location (40 CFR § 270.30(i)).

**I.D.8 Reporting Planned Changes**

The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility (40 CFR § 270.30(l)(1)). This notice shall include a description of all incidents of noncompliance reasonably expected to result from the proposed changes.

**I.D.9 Anticipated Noncompliance**

The Permittee shall give advance written notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with Permit requirements (40 CFR § 270.30(l)(2)).

**I.D.10 Twenty-four Hour Reporting**

The Permittee shall report to the Director any noncompliance which may endanger human health or the environment. Information shall be provided orally within twenty- four (24) hours from the time the Permittee becomes aware of the circumstances. The information specified (a, b, and c) shall be reported orally within 24 hours:

- a. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
- b. Any information of a release or discharge of hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.
- c. The description of the occurrence and its cause shall include at least the following:
  - i. Name, address, and telephone number of the owner or operator;
  - ii. Name, address, and telephone number of the facility;
  - iii. Date, time, and type of incident;
  - iv. Name and quantities of material(s) involved;
  - v. The extent of injuries, if any;
  - vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
  - vii. Estimated quantity and disposition of recovered material that resulted from the incident (40 CFR § 270.30(l)(6)).
- d. A written submission shall also be provided to the Director within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated duration of noncompliance; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Director may waive the 5-day notice requirement in favor of a written report within fifteen (15) days (40 CFR § 270.30(l)(6)(iii)).

**I.D.11 Other Noncompliance**

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports are submitted. The reports shall contain the information listed in permit condition I.D.11 (40 CFR § 270.30(l)(10)).

**I.D.12 Other Information**

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Director, the Permittee shall promptly submit such facts or information to the Director (40 CFR § 270.30(l)(11)).

**I.E MONITORING AND RECORDS**

**I.E.1 Monitoring Reports**

Monitoring shall be performed and results shall be reported at the intervals specified in the Permit.

**I.E.2 Samples and Measurements**

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR § 270.30 (j)(1)). The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method specified in 40 CFR 261, Appendix I, or an equivalent method approved by the EPA. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846 (3rd ed.; November, 1986, as updated), Standard Methods of Wastewater Analysis (16th ed.; 1985, as updated), or an equivalent method approved by the EPA. Additionally, the laboratory must be accredited for the analytical method, matrix and target analyte (where applicable) by the Virginia Environmental Laboratory Accreditation Program (VELAP).

**I.E.3 Records of All Monitoring Information**

The Permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, all certifications required by 40 CFR § 264.73(b)(9), and records of all data used to complete the application for this Permit, for a period of at least 3 years (or longer if specified elsewhere in this Permit) from the date of the sample collection, measurement, report, certification, or application. These retention periods may be extended by the request of the Director at any time and are automatically extended during the course of any unresolved enforcement actions regarding this facility. The Permittee shall maintain records from all ground-water monitoring wells and associated ground-water surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

Records of monitoring information shall include at a minimum:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or test methods used; and
- f. The results of such analyses. (40 CFR § 270.30(j))

**I.F COMPLIANCE NOT CONSTITUTING DEFENSE**

Compliance with the terms of this Permit does not constitute a defense to any action brought under Chapter 14, Article 8 of Title 10.1, Code of Virginia (1950) as amended or any other Commonwealth law governing protection of the public or the environment.

**I.G TRANSFER OF PERMITS**

This Permit is not transferable to any person except after notice to the Director (40 CFR § 270.30(l)(3)). The Director may require modification or revocation and reissuance pursuant to 40 CFR 124.5, 270.40, 270.41, 270.42, and 270.43 to change the name of the Permittee and incorporate such other requirements as may be necessary. Before transferring ownership or operation of the facility during its operation life, the Permittee shall notify the new owner or operator in writing of the requirements of 9 VAC 20-60-264 and 40 CFR Part 264 and 270 and at the same time shall send a copy of such notice to the Director (40 CFR § 264.12(c)).

## **I.H PERMIT EXPIRATION AND CONTINUATION**

Pursuant to 9 VAC 20-60-270.B.15., this Permit will remain in force until the effective date of a new permit if the Permittee has submitted a timely, complete application pursuant to Permit Condition I.D.2., and through no fault of the Permittee, the Director has not issued a new permit with an effective date on or before the expiration date of this Permit. All conditions of the continued Permit shall remain fully effective and enforceable (40 CFR § 270.51).

## **I.I REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT**

### **I.I.1 Annual Report**

The Permittee shall submit an annual groundwater monitoring and remedial measures report no later than March 1st of each calendar year containing, at a minimum, groundwater monitoring results for each monitoring event including applicable summary tables and figures, remedial measures monitoring results, and system O&M data for the ISCO treatment system.

### **I.I.2 Biennial Report**

The Permittee shall submit a biennial report to the Department which covers facility activities during even numbered calendar years. At a minimum this report will include:

- a. The generator biennial report pursuant to 40 CFR § 262.41; and
- b. The hazardous waste management facility biennial report pursuant to 40 CFR § 270.30(l)(9) and § 264.75.

### **I.I.3 Three (3)-Year Remedy Status Evaluation Report**

The Permittee shall submit a three (3)-year remedy status evaluation report on the progress of remedial measures and of meeting the cleanup targets and remedial goals; effectiveness of the institutional controls and engineering controls for meeting human health and environmental protection objectives including, but not limited to, a review of the facility property with respect to zoning maps or planning documents that may affect future land use of the impacted area. The Pittsylvania County Health Department will be provided with Polynt's three (3)-year remedy status evaluation reports.

The required three (3)-year remedy status evaluation reports that coincide with annual reports may be compiled with the annual report.

### **I.I.4 Duty to Submit Certified Documents**

All work plans, reports, notifications or other submissions which are required by this Permit to be sent or given to the Director shall be sent electronically, postal mailing or hand-delivered to:

#### **For Corrective Action and Groundwater:**

**Department of Environmental Quality**

**Groundwater/Corrective Action Program Team Leader**

**Office of Remediation Programs**

**PO Box 1105**

**Richmond, Virginia 23218**

**Street Address:**

**629 East Main Street  
Richmond, VA 23219**

**For Permit Modifications:**

**Department of Environmental Quality  
Hazardous Waste Program Manager  
Office of Financial Responsibility and Waste Programs  
PO Box 1105  
Richmond, Virginia 23218**

**Street Address:**

**629 East Main Street  
Richmond, VA 23219**

And one (1) copy of all such correspondence, reports, and submissions shall also be sent electronically to:

**Land Program Manager, Blue Ridge Regional Office  
Department of Environmental Quality  
3019 Peters Creek Road  
Roanoke, VA 24019**

**Associate Director, Office of Remediation  
Environmental Protection Agency,  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029  
Mail Code: (3LC20)**

**I.I.5 Signatory Requirements**

All applications, work plans, reports, and other information submitted shall be signed and certified as specified by 40 CFR § 270.11.

**I.J DOCUMENTS TO BE MAINTAINED AT THE FACILITY SITE**

**I.J.1 Documents**

Current copies of the following documents, as amended, revised, and modified, shall be maintained at the facility. These documents shall be maintained until corrective action is

completed and certified by the Permittee and by an independent, Virginia-registered professional engineer, unless a lesser time is specified in the Permit.

- a. The Permit, including all attachments, revisions and modifications;
- b. All Part A and B Permit Applications supporting the Permit;
- c. The facility operating record required by 40 CFR § 264.73, to the extent applicable;
- d. Inspection schedules and logs required by 40 CFR § 264.15(b)(2) and § 264.15(d), as applicable;
- e. Personnel training documents and records required by 40 CFR § 264.16 and this Permit, as applicable;
- f. Closure Plans, as required by 40 CFR § 264.112(a), as applicable;
- g. Post-Closure Plans, as required by 40 CFR § 264.118(a), as applicable;
- h. Groundwater sampling and analysis plans for remedial effectiveness and long term groundwater monitoring required by this Permit, including groundwater monitoring results;
- i. Operations and maintenance plan required by this Permit;
- j. Corrective Action work plans, reports, and other information and submissions regarding Corrective Action, as applicable under this Permit; And
- k. All other documents required by Permit Conditions I.D.8 through I.D.12 and I.E.

## **I.K. APPROVAL/DISAPPROVAL OF SUBMISSIONS**

### **I.K.1 Review**

The DEQ will review the plans, reports, schedules and other documents (hereinafter collectively referred to as "submission") submitted which require the Director's or Department's approval. The DEQ will notify the Permittee in writing of the DEQ's approval, conditional approval, or disapproval of each submission.

### **I.K.2 Approval**

Each submission required by this Permit, upon approval by the Director, is incorporated into this Permit. Any noncompliance with a DEQ-approved submission shall be deemed as noncompliance with this Permit. A conditionally approved submission, including any terms of such conditional approval set forth in DEQ's decision, shall constitute the DEQ-approved submission and shall be incorporated into this Permit.

### **I.K.3 Conditional Approval**

In the event of the DEQ's conditional approval of submission, the DEQ shall specify in writing any deficiencies in the submission and the terms upon which approval of the submission is conditioned. If the Permittee disputes any term upon which approval of the submission was conditioned, the Permittee may initiate Dispute Resolution pursuant to permit condition I.L.

### **I.K.4 Disapproval**

In the event of the DEQ's disapproval of a submission, the DEQ shall specify the deficiencies in writing. The Permittee shall address the specified deficiencies within a reasonable time period established by the DEQ taking into account the tasks to be performed, and submit the revised submission, as necessary, to the DEQ for approval.

**I.K.5 Revision Disapproval**

If the revised submission is disapproved, the DEQ will notify the Permittee of the deficiencies in writing and specify a schedule for the Permittee to correct the deficiencies and resubmit the submission to DEQ. The Permittee shall correct the deficiencies as directed by DEQ, and forward the revised submission within the time period specified by DEQ. In the event the Permittee disagrees with the DEQ's disapproval of the revised submission, the Permittee shall notify the DEQ in writing and the disagreement shall be resolved in accordance with the Dispute Resolution provision in permit condition I.L. of this Permit.

**I.L DISPUTE RESOLUTION**

**I.L.1 Disagreement with Department's Determination**

Except as otherwise provided in this Permit, in the event the Permittee disagrees, in whole or in part, with Department disapproval of any submission required by this Permit, the Permittee shall notify the Department in writing of its objections, and the basis thereof, within fourteen (14) days of receipt of the Department's disapproval. Such notice shall set forth the specific matters in dispute, the position(s) the Permittee asserts which should be adopted as consistent with the requirements of the Permit, the basis for the Permittee's position, and supporting documentation considered necessary for the Department's determination.

**I.L.2 Resolution**

The Department and the Permittee shall have an additional fourteen (14) days from the Department's receipt of the notification to meet or confer to resolve any disagreement/dispute. In the event agreement is reached, the Permittee shall submit the revised submission and implement the same in accordance with such agreement.

**I.L.3 Agreement Not Met**

In the event the Permittee and the Department are not able to reach an agreement on the dispute items within the additional 14-day period, the Department will notify the Permittee in writing of its decision on the dispute and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. The Permittee does not waive its right to assert any and all available defenses in a proceeding to enforce this Permit.

**I.L.4 Appeal**

In the event the Permittee disagrees with DEQ's disapproval of a submission or revised submission and the DEQ's written decision regarding dispute items, the Permittee may file an appeal with the Director within 30 days of the disapproval (as provided for in Rule 2A:2 of the Supreme Court of Virginia).



## **MODULE II – SITE-WIDE CORRECTIVE ACTION**

### **II.A CORRECTIVE ACTION FOR CONTINUING RELEASES; PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT**

#### **II.A.1 Required Corrective Action**

Section 3004(u) of RCRA, 42 U.S.C. § 6924(u), and regulations codified under 40 CFR § 264.101, provide that all permits issued after November 8, 1984, must require corrective action (CA) as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU), regardless of when waste was placed in the unit.

#### **II.A.2 CA Boundary**

Under Section 3004(v) of RCRA, 42 U.S.C. § 6924(v), and 40 CFR § 264.101(c), the Department may require that CA at a permitted facility be taken beyond the facility boundary where necessary to protect human health and the environment, unless the owner or operator of the facility concerned demonstrates to the satisfaction of the Department that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action.

#### **II.A.3 Terms and Conditions**

Section 3005(c)(3) of RCRA, 42 U.S.C. § 6925(c)(3), and 40 C.F.R. § 270.32(b) provide that each permit shall contain such terms and conditions as the Department determines necessary to protect human health and the environment.

### **II.B CORRECTIVE MEASURES IMPLEMENTATION**

#### **II.B.1 Background**

Cook Composites and Polymers Co. (CCP) was issued a Hazardous Waste Management Permit (Permit) on July 8, 1996 for the storage and treatment of hazardous waste. The Permit was modified on September 19, 2003 to incorporate RCRA Corrective Action requirements for evaluation of thirty three (33) solid waste management units (SWMUs) and nine (9) areas of concern (AOCs), and was renewed on October 30, 2006. The Permit required CCP to complete a RCRA Facility Investigation (RFI), implement interim measures (IMs) as necessary, and complete a Corrective Measures Study (CMS). The RFI for all known units has been effectively completed, and the Final Phase II RFI Report, dated November 2007, was submitted to the Department. The CMS has been effectively completed, and the Final CMS was submitted to the Department on May 12, 2010. Further, the Permittee conducted corrective action (IMs) for the remediation of the release of hazardous waste or hazardous constituents at or from several SWMUs and AOCs during the RFI and CMS phases. Polynt Composites USA Inc. acquired the facility in 2014.

#### **II.B.2 Final Remedy Selection**

- a. Based on the findings of the RFI, DEQ concluded that past operations at the facility resulted in soil and groundwater contamination. Constituents of concern (COCs) in soil above clean up targets at Sample Area 5 (SA-5) include acetone, benzene, ethylbenzene,

and xylenes. COCs in groundwater above clean up targets include acetone, benzene, ethylbenzene, xylenes, and manganese. CCP implemented a pilot test study for the use of in-situ chemical oxidation (ISCO) to treat COCs in soil and groundwater at SA-5. Subsequently, CCP conducted a CMS, which evaluated the pilot test study results. Documentation for completion of site-wide investigation reports and studies have been compiled by the Department, entitled Administrative Record. Based on the CMS results and the Administrative Record, the final remedy for the Site was developed and is described in the Statement of Basis, dated October 28, 2010. The requirements of this Permit provide for the operation and maintenance of the remedy described in the Statement of Basis.

- b. The goal of the remedy for site-wide corrective action is to ensure protection of human health and the environment. The final remedy for the Site consists of active remediation, long term groundwater monitoring, and implementing Institutional Controls and Engineering Controls. Institutional Controls (ICs) are generally non-engineered mechanisms such as administrative and/or legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. Engineering Controls (ECs) are generally engineered mechanisms such as a landfill cap.
- c. The details of the final remedy are summarized below and were described in more detail in the site specific Corrective Measures Implementation (CMI) Work Plan, dated January 2012 and required by this Permit. Minor modifications in the activities, studies, techniques, procedures, and designs or schedules utilized in carrying out the requirements of this Permit and necessary for the O&M and/or completion of the remedy may be made by written agreement of the Project Coordinators. Short term and long term clean up targets are contained in Attachment C of this Permit.
  - i. Continued operation of the ISCO system at Sample Area-5 (SA-5) until long term clean up targets for soil have been met or data indicate asymptotic treatment effectiveness.
  - ii. Continued operation of the ISCO system until the short term clean up target for manganese and the long term clean up targets for acetone, benzene, ethylbenzene, and xylenes in groundwater have been met.
  - iii. Continued performance of a groundwater monitoring program to monitor the progress of the active remedial measures and subsequently the attenuation of constituents of concern in groundwater until all clean up targets for groundwater have been met.
  - iv. Continued annual inspection and maintenance of the concrete cap that covers SWMUs 3, 4, 10A, 12, and 23.
  - v. Implementation and maintenance ICs and ECs including property use restrictions for groundwater and soil in accordance with Permit Section II.B.3 below.

### II.B.3 Final Remedy Implementation

- a. The Permittee submitted to the DEQ a CMI Work Plan for operation and maintenance of the ISCO system and the groundwater pump and treat system, long term groundwater monitoring, remedial effectiveness monitoring for soil and groundwater, cap inspection and maintenance, reporting, and implementation of ICs, ECs, and additional property use

restrictions. The approved work plan is dated January 2012. ICs, ECs, and additional restrictions that have been implemented include;

- i. notify prospective buyers of the property of the environmental conditions at the Site and of DEQ's selected corrective measures as part of the final remedy under RCRA Corrective Action;
  - ii. prohibit use of the property for residential purposes (including single family homes, multiple family dwellings, schools, day care facilities, child care centers, apartment buildings, dormitories, other residential style facilities, hospitals, and in-patient health care facilities) within the surveyed footprint of SA-1, SA-3, SA-5, and SA-12;
  - iii. prohibit the use of groundwater beneath the property except for non-contact cooling water and purposes to support selected corrective measures;
  - iv. require inspection and maintenance of the concrete cap over SWMUs 3, 4, 10A, 12, and 23;
  - v. require vapor barriers be utilized in or beneath new, totally enclosed structures designed for occupation within the foot print of SA-3 and SA-5, unless it's demonstrated to DEQ that it's not necessary to protect human health; and
  - vi. restrict subsurface soil excavation below four feet except in conformance with an appropriate soil management plan
- b. The Permittee shall, at a minimum, include notice of the property use restrictions in the deed for the property and notify the local health authority utilizing mechanisms specified in the Statement of Basis, and shall notify the DEQ in writing of any proposed changes in the use of the property or proposals for any site work that affects the contamination or its disposition on the property.
- c. The Permittee has provided coordinate surveys for applicable property use restrictions that meet the following requirements:
- i. Define the boundary of each use restriction as a polygon
  - ii. Establish the longitude and latitude of each polygon vertex as follows
    1. Decimal degrees format
    2. At least seven decimal places
    3. Negative sign for west longitude
    4. WGS 1984 datum

## **II.C EVALUATION OF THE SELECTED REMEDY**

The Permittee shall submit an annual progress report on the corrective measure(s) remedy performance and continue to submit annual groundwater monitoring and remedial measures reports until remedial clean up requirements have been met. If the Department determines that the selected corrective measure(s) remedy will not comply with the media clean-up requirements, the Department may require the Permittee to perform additional studies and/or perform modifications to the existing corrective measure(s) remedy. If necessary, the Department or the Permittee may seek modification of this Permit pursuant to 40 C.F.R. § 270.41 or § 270.42 and § 124.5 to implement modifications to the existing corrective measures remedy.

## **II.D EMERGENCY RESPONSE; RELEASE REPORTING**

### **II.D.1 Emergencies**

If, at any time during the term of this Permit, the Permittee discovers that a release of hazardous waste or hazardous constituents at or from the Facility is presenting or may present an imminent and substantial endangerment to human health or the environment, and such release is not subject to a Contingency Plan and Emergency Procedures, as applicable to the facility, and as defined in the portion of the RCRA Permit issued by the Department, the Permittee shall:

- a. Notify the Department as soon as practicable of the source, nature, extent, location, and the amount of such release, the endangerment posed by such release and the actions taken and/or to be taken, to the extent known, to address such release. Such notification shall also be confirmed in writing within three (3) days of discovery of such release.
- b. Unless otherwise directed by the Department, immediately take such actions as are necessary and appropriate to address such release.

### **II.D.2 Releases**

The Permittee shall notify the Department in writing of the nature, source, extent, and location of a release of hazardous waste or hazardous constituents at or from the Facility within seven (7) days of discovery of such release which:

- a. Is not being addressed by corrective measures at the time of such discovery.
- b. Is not being addressed pursuant to permit conditions II.D.1. Emergencies.
- c. Is not subject to the Contingency Plan and Emergency Procedures, as applicable, if set forth in the portion of the RCRA Permit issued by the Department.

### **II.D.3 Requirement of SWMU and/or AOC**

Based on the information submitted in Permit Condition II.D.2 (Releases), the Department may require the SWMU and/or AOC to be included in a RCRA Facility Investigation or may require Interim Measures.

### **II.D.4 Department's Authority**

Nothing in this Permit shall limit the Department's authority to undertake or require any person to undertake response action or corrective action under any law, including but not limited to, Sections 104 or 106 of CERCLA, 42 U.S.C. §§ 9604 or 9606, and Section 7003 of RCRA, 42 U.S.C. § 6973. Nothing in this Permit shall relieve the Permittee of any obligation it may have under any law, including, but not limited to, Section 103 of CERCLA, to report releases of hazardous waste, hazardous constituents or hazardous substances to, at or from the Facility.

## **II.E GUIDANCE DOCUMENTS**

Any corrective action performed at the facility shall be in general accordance with applicable EPA RCRA corrective action guidance available at:

<https://www.epa.gov/hwcorrectiveactionsites/corrective-action-resources-specific-epas-region-3> .

## **II.F SOLID WASTE MANAGEMENT UNIT (SWMU) ASSESSMENT**

#### II.F.1 Newly Identified SWMU

The Permittee shall notify the Department and the EPA Region III, in writing, of any newly identified SWMU at the Facility, no later than thirty (30) days after the date of discovery. The notification shall include, but not be limited to, the following known information:

- a. A description of the SWMUs type, function, dates of operation, location (including a map), design criteria, dimensions, materials of construction, capacity, ancillary systems (e.g., piping), release controls, alterations made to the unit, engineering drawings, and all closure and post-closure information available, particularly whether wastes were left in place.
- b. A description of the composition and quantities of solid wastes processed by the units with emphasis on hazardous wastes and hazardous constituents.
- c. A description of any release (or suspected release) of hazardous waste or hazardous constituents originating from the unit. Include information on the date of release, type of hazardous waste or hazardous constituents, quantity released nature of the release, extent of release migration, and cause of release (e.g., overflow, broken pipe, tank leak, etc.). Also, provide any available data that quantifies the nature and extent of environmental contamination, including the results of soil and/or groundwater sampling and analysis efforts. Likewise, submit any existing monitoring information that indicates releases of hazardous waste or hazardous constituents has not occurred or is not occurring.
- d. A discussion of the need for and feasibility of implementing interim measures immediately.

#### II.F.2 New SWMU Department Determination

Upon receipt of the notification of any newly identified SWMU, the Department will determine the need for corrective action at such SWMU. If corrective action is necessary to protect human health or the environment, the Department will determine whether a RCRA Facility Investigation will be performed and the need for and scope of any Interim Measures for a newly identified SWMU.

#### II.F.3 Actions for New SWMU

Within sixty (60) days after receipt of the Director's determination that a RCRA Facility Investigation or Interim Measures is necessary, the Permittee shall submit a RCRA Facility Investigation Work Plan or Interim Measures Work Plan that meets the applicable guidance. The Department's determination shall either specify the media and/or parameters to be investigated or shall require the Permittee to propose and justify the selection of media and/or parameters.

#### II.F.4 Reports

Within the time specified in the approved RCRA Facility Investigation Work Plan or Interim Measures Work Plan, the Permittee shall submit the RCRA Facility Investigation Report or Interim Measures Report. The reports will provide all data necessary for the Department to determine whether a Corrective Measures Study or additional Interim Measures Work Plan is required.

#### II.F.5 RCRA Facility Investigation and Corrective Measures

In lieu of a separate RCRA Facility Investigation, the Permittee may propose to incorporate any newly identified SWMU into the ongoing corrective measures. Any such proposal shall be submitted to the Department along with notification of the discovery of the SWMU(s).

## **II.G FINANCIAL ASSURANCE**

### **II.G.1 Initial Cost Estimate**

Assurances of financial responsibility for corrective action must be provided in accordance with conditions herein. The Permittee submitted an initial cost estimate for completion of the approved remedy(s) as a component of the CMI Work Plan submitted to the Department in December 2011.

### **II.G.2 Cost Estimates Updated**

The cost estimate for completing the approved remedy(s) shall be updated pursuant to any changes or modifications to the final remedy approved by the Department or development of more detailed information.

Within ninety (90) calendar days of receipt of Department's written approval of modifications to the final remedy, the Permittee shall submit an updated cost estimate to the Department.

### **II.G.3 Financial Assurance Demonstration**

Within thirty (30) calendar days of approval of the initial cost estimate for financial assurance and each succeeding year, the Permittee shall demonstrate compliance with financial assurance to the Department for completing the approved remedies in accordance with 40 C.F.R. § 264.101(b). Within thirty (30) calendar days of approval of any updated and/or revised cost estimate, the Permittee shall demonstrate to the Department financial assurance for the updated cost estimates.

## **II.H RECORDKEEPING**

Upon completion of closure of any SWMU, the Permittee shall maintain in the Facility operating record, documentation of the closure measures taken.

## **II.I ACCESS FOR CORRECTIVE ACTION OVERSIGHT**

The Department and its authorized representatives shall have access to the Facility at all reasonable times for the purpose of monitoring compliance with the provisions of this Permit. The Permittee shall use its best efforts to obtain access to property beyond the boundaries of the Facility at which corrective action is required by this Permit (see Section 3004(v) of RCRA, 42 U.S.C. § 6924(v) and 40 CFR § 264.101(c)) for: (1) the Permittee and any contractor of the Permittee for the purpose of taking corrective action required by this Permit, and (2) the Department and its authorized representatives for the purposes described in this paragraph.

## **II.J COMPLETION OF REMEDY**

If any of the institutional or engineering controls are no longer necessary to protect human health and the environment, the Permittee shall submit a written notification and certification to the Department by registered mail, stating that the remedy has been completed in accordance with requirements of this Permit and requesting removal of the controls from the Permit. The

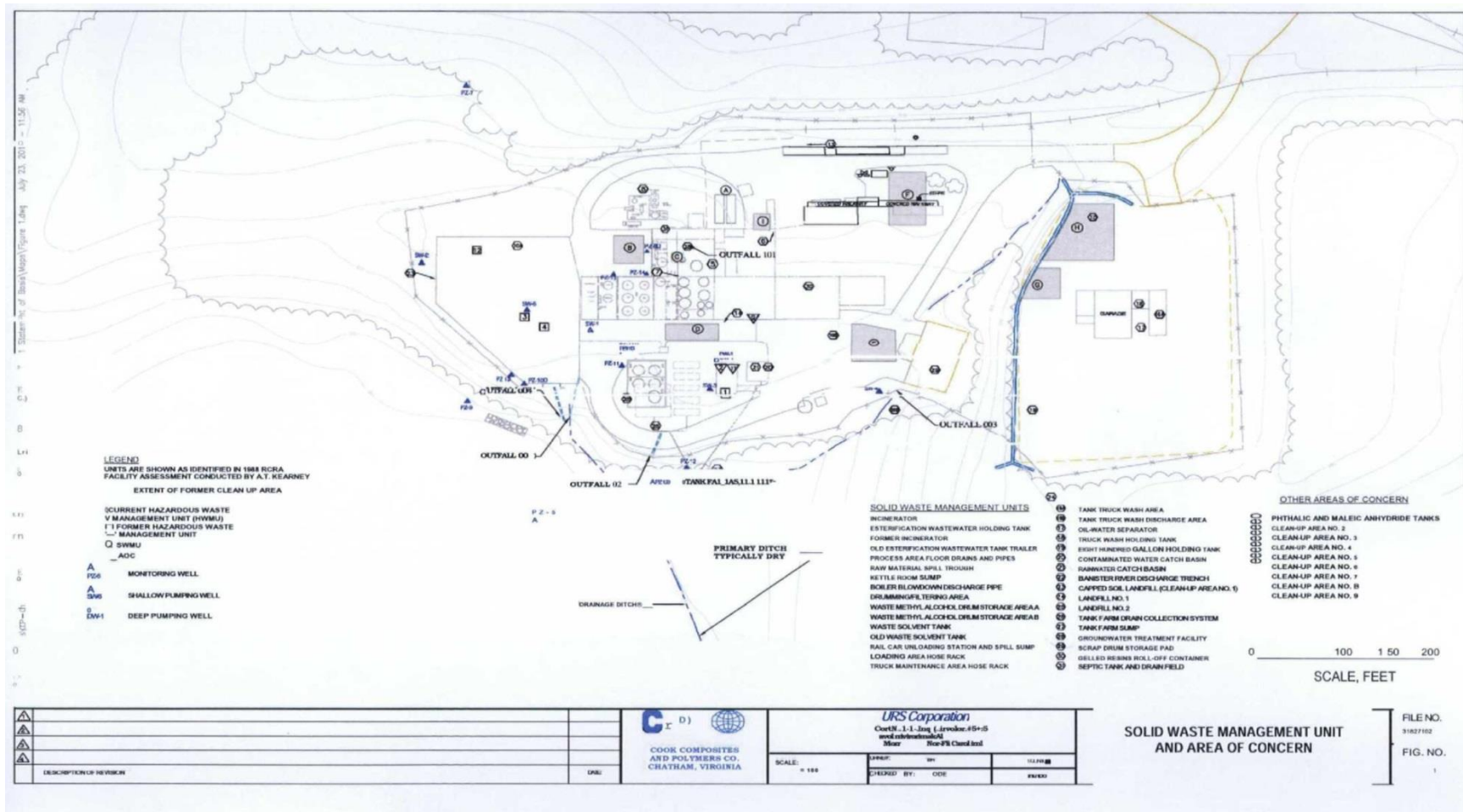
certification must be signed by the Permittee and by an independent, Virginia registered professional engineer.

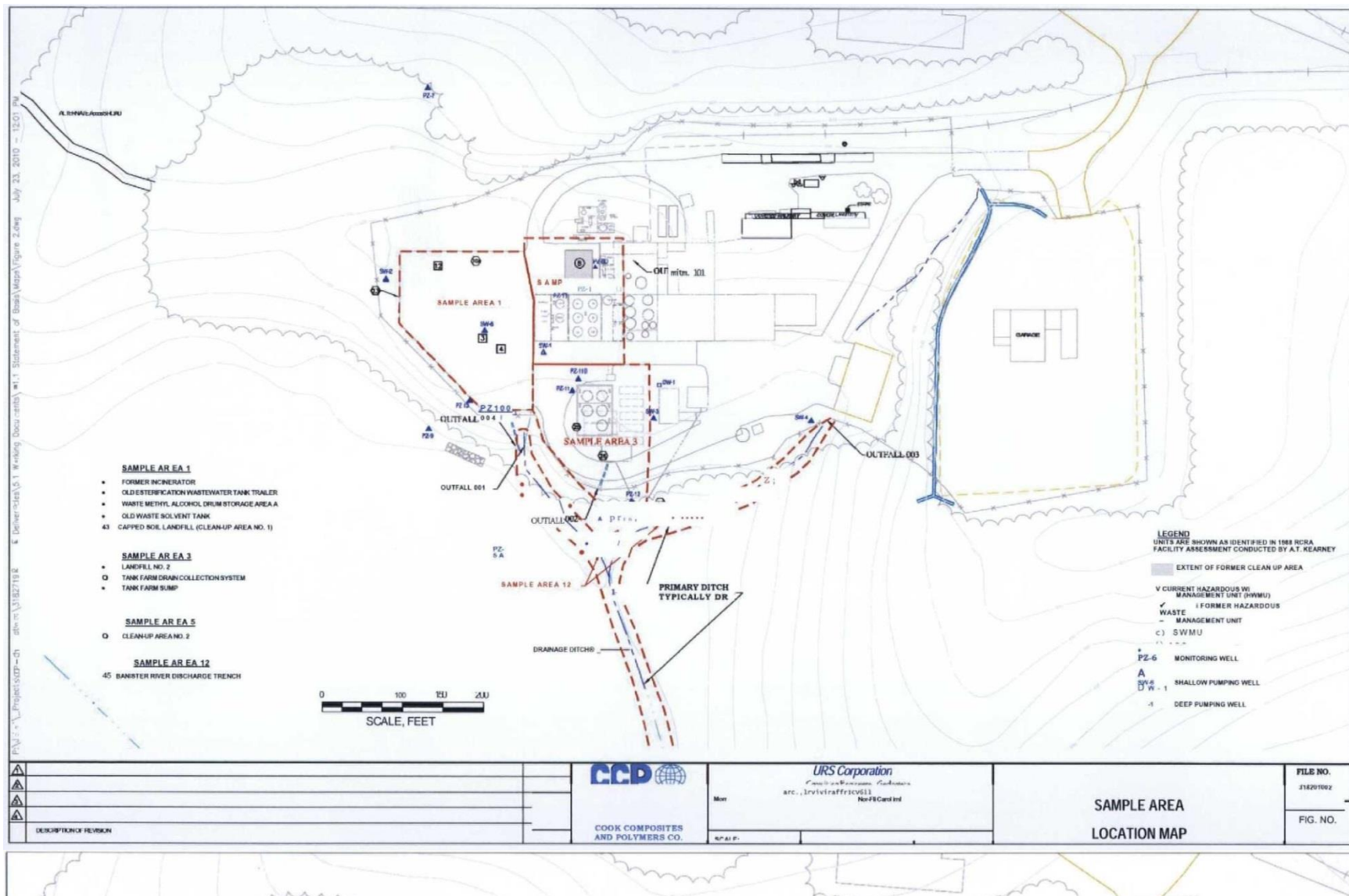
In cases where no other Permit conditions remain, the Permit may be modified not only to reflect the determination that remedy controls are no longer necessary, but also to change the expiration date of the Permit to allow for earlier permit expiration in accordance with 40 CFR § 124, § 270.41, and § 270.42 as applicable.

Upon completion of the remedy or as needed in the interim, the Permittee shall request approval for abandonment of all monitoring wells, observation wells, and remediation wells from the Department prior to implementing well abandonment activities. All wells that are to be abandoned shall be plugged and abandoned in general accordance with 12VAC 5-630-420 and 12VAC 5-630-450. Chlorination of each well is not required. An effort to remove the well casing and associated materials shall be made at each well prior to abandonment. A report including methods and certification shall be submitted to the Department within thirty (30) days following the completion of abandonment. The Permittee may propose alternate methods for well abandonment and must obtain approval from the Department prior to implementation.

**ATTACHMENT A**  
***FACILITY MAPS AND FIGURES***







## **ATTACHMENT B**

### ***FACILITY BACKGROUND, SWMUS AND AOCS, AND ENVIRONMENTAL HISTORY***

## **ATTACHMENT B**

### *FACILITY BACKGROUND, SWMUs AND AOCs, AND ENVIRONMENTAL HISTORY*

#### **FACILITY BACKGROUND**

The Polynt Composite USA Inc. (Polynt) facility in Chatham, Pittsylvania County, Virginia occupies approximately 101 acres of property in the Tight Squeeze Industrial Park. The facility is located in Pittsylvania County which is in the Piedmont physiographic province of south-central Virginia. The Banister River is located approximately 1,200 ft south of the facility. Unnamed tributaries to the Banister River run just south of the facility. The environmental setting and updated site specific information is fully described in the Phase II RFI Report dated November 2007.

The facility was originally constructed in 1969 by the former Freeman Chemical Corporation (Freeman Chemical) on a 68-acre parcel of property in the Tight Squeeze Industrial Park near Chatham, Virginia. Cook Composite and Polymers Co. (CCP) owned and operated the facility from 1990 to 2014. Polynt took ownership of the facility in 2014. The facility produces unsaturated polyester resins for use in the manufacture of fiberglass boats, bathroom fixtures, sinks and related specialty composite products. Facility operations consist of batch process equipment housed in a roofed, semi-enclosed facility. The batch process equipment includes aboveground process tanks, reactor vessels (referred to as kettles), and blending and thinning tanks used to adjust the composition and consistency of the intermediate or finished product batches.

CCP was issued a Hazardous Waste Management Permit (Permit) on July 8, 1996 for the storage and treatment of hazardous waste. The Permit was modified on September 19, 2003 to incorporate RCRA Corrective Action requirements and encompasses thirty three (33) solid waste management units (SWMUs) and nine (9) areas of concern (AOCs) identified during a RCRA Facility Assessment (RFA) conducted in 1988. The permit was renewed on October 30, 2006. A modification to the permit was issued in 2011. This modification incorporated DEQs proposed decision of the corrective action remedy selected into the permit. Polynt took ownership of the property in 2014.

#### **DESCRIPTION OF SWMUs AND AOCs**

##### **SWMU-1 Incinerator**

SWMU-1 was designated as the permitted hazardous waste incinerator. This unit ceased operation as an incinerator at the facility on March 16, 2004. Closure activities were completed within 360 days, and a closure report was submitted on May 10, 2005. Clean closure of this unit was approved by the DEQ in 2006. While no longer burning hazardous wastes, this unit remains active as a thermal oxidizer for vapors generated by various processes at the facility.

An investigation of SWMU-1 was not required under RCRA Corrective Action (Corrective Action) by the original permit. However, during the RFI, the DEQ requested an evaluation for long term air deposition. Soil sample locations were selected based upon regional wind data and air modeling. The data from the samples were evaluated under a human health risk assessment, and found to be within or below acceptable risk ranges for industrial scenarios. Based upon this evaluation, no further action is required.

##### **SWMU-2 Esterification Wastewater Holding Tank**

SWMU-2 consisted of the esterification wastewater holding tank, an above ground 8,750-gallon stainless steel tank located within the incinerator building. The tank collected a combination of esterification water and waste solvents from the kettles and contained a decanter that was used to separate waste solvents from the esterification water. The solvents were then transferred to the waste solvent tank (SWMU-11) located adjacent to the esterification wastewater holding tank. As discussed in Section 2.2, the esterification water received by this unit was formerly designated as a F003 hazardous waste, due to the presence of a xylene based solvent, and incinerated on site.

In 2003-2004 CCP modified the manufacturing process, replacing xylene solvent with a nitrogen sparge system. As part of the permit closure process, this tank was emptied and cleaned with caustic soda and then a hot rinse. All piping connecting the tanks to the former incinerator were removed and disposed of according to the closure plan. Rinse samples for the SWMU 2 and the solvent storage tank (SWMU-11) were demonstrated to meet tap water criteria, and clean closed according to the permit [URS Corporation, May 2005]. Currently the esterification water no longer contains significant amounts of xylene, but does contain elevated levels of benzene, and is sometimes flammable. Therefore, the esterification water contained in SWMU-2 may be classified as a D018 (benzene) and/or a D001 (flammability) hazardous waste. The unit is currently a HWMU and the facility is classified as a LQG.

#### **SWMU-3 Former Incinerator**

SWMU-3 consisted of the former incinerator that was used to incinerate esterification wastewater, paper, and trash. At times during its nine-year history, the unit would shut down, and the inflow stream would continue to flow, eventually allowing esterification water to be released onto the ground surface. The former incinerator was shut down in 1981 and removed in August 1982. Its former location is now covered by a concrete cap (A.T. Kearney, 1988). This area was evaluated within SA-1 during the RFI. SWMU-3 is considered a former HWMU and is currently included within the site wide groundwater monitoring program.

#### **SWMU-4 Old Esterification Wastewater Tank Trailer**

SWMU-4 consisted of a stationary tank trailer used to store esterification wastewater adjacent to the former incinerator. Esterification wastewater was conveyed by an underground conveyance pipe to the tank trailer location. The tank trailer was taken out of operation in 1981 and its former location is now covered by a concrete cap (A.T. Kearney, 1988). The conveyance pipe was abandoned by removal during facility upgrades completed in 1983. This area was evaluated within SA-1 during the RFI. SWMU-4 is considered a former HWMU and is currently included within the site wide groundwater monitoring program.

#### **SWMU-5 Process Area Floor Drains and Pipes**

SWMU-5 includes the floor drains and associated underground piping in the kettle room. The underground pipes discharge to the kettle sump. Material collected in the kettle sump is pumped to the contaminated water catch basin (SWMU-20). Prior to 1983, the kettle sump process area floor drains and pipes discharged overland to an area northwest of the facility building through what is now the capped soil landfill (SWMU-23), and eventually into the facility drainage ditches (SWMU-22). Prior to the RFI this unit was eliminated from Corrective Action investigations as it did not manage hazardous wastes, nor could these units be associated with a release of hazardous constituents. Nevertheless, the floor drains and pipes for the process area were evaluated as part of the Kettle Room Sump (SWMU-7) integrity evaluations and found to be intact and in good working order. This unit does not process hazardous wastes.

#### **SWMU-6 Raw Material Spill Trough**

SWMU-6 is a steel trough used to contain and collect spills and floor wash water in the raw material storage area. Material collected in the trough is gravity fed to a 4-inch black iron pipe that conveys the material to the kettle room. The collected material is ultimately discharged to the contaminated water catch basin (A.T. Kearney, 1988). This unit began operation in 1983 and remains in operation.

#### **SWMU-7 Kettle Room Sump**

SWMU-7 is a 500-gallon, in-ground, concrete tank located outside of the kettle furnace room. The Kettle Room Sump collects spills and floor wash water from the kettle room. The sump discharges to the contaminated water catch basin (SWMU-20). Constituents of wash water may include residues of polyester resins, fume silica, isophthalic acid, cleaning solvents, and traces of oil and grease (A.T. Kearney, 1988). The Kettle Room Sump is equipped with a sump pump with alarms, and is currently in operation. During the RFI an integrity evaluation was conducted on this unit, and was determined to be in good working condition. No further evaluation is required. This unit does not process hazardous wastes.

#### **SWMU-8 Former Boiler Blowdown Discharge Pipe**

SWMU-8 consisted of an underground black iron pipe that led from the boiler to a trench that discharged to the drainage trench leading to the Banister River. The former boiler blow down discharge pipe was removed in 1983. Boiler blow down now discharges to the Kettle Room Sump (SWMU-7) and ultimately to the contaminated water catch basin (SWMU-20) (A.T. Kearney, 1988). This unit was eliminated from Corrective Action investigations based upon data presented in the VI [URS Greiner Woodward-Clyde, 1999]. SWMU did not process hazardous wastes.

#### **SWMU-9 Drumming/Filtering Area**

SWMU-9 is located on the lower level of the southern end of the manufacturing building. Operations at this unit include filtering and drumming of polyester resins. Wastes managed at SWMU-9 include filter bags, waste detergent, and floor wash water. All fluids are collected by a drain in the truck loading area that discharges to the contaminated water catch basin. Un-cured resins and spent filter bags generated in this area are handled as a D001 hazardous waste. Once generated, the materials are containerized in 55-gallon drums and sent off-site for disposal.

Cured or gelled resins are occasionally generated in this area as the result of unintended polymerization of an intermediary or final product. Cured resins become a solid thermoset plastic that is containerized and managed as a non-hazardous waste since the material no longer exhibits the characteristic of flammability. Drummed, cured resins may be stored within SWMU-29 prior to disposal. This unit was eliminated from the VI based upon photo documentation that a release was not feasible due to the spill control features present.

#### **SWMU-10A Former Waste Methyl Alcohol Drum Storage Area A**

At SWMU-10A, approximately 500 drums of waste methyl alcohol and water were reportedly stored on the ground, north of the former incinerator. The waste methyl alcohol and water was reportedly disposed in the former incinerator. All drums were removed from SWMU-10A in 1981. This area is now covered by the concrete cap (A.T. Kearney, 1988). SWMU-10A did not

process hazardous wastes. SWMU-10A was evaluated within SA-1 during the RFI and is currently included within the site wide groundwater monitoring program.

#### **SWMU-10B Former Waste Methyl Alcohol Drum Storage Area B**

At SWMU-10B, approximately 100 drums of a methyl alcohol and water mixture were reportedly located on the ground, southwest of the Drumming/Filtering Area. The waste methyl alcohol and water was burned in the former incinerator. All drums were removed from this area in 1981, and the soil at this location was removed during remedial action at Cleanup Area 5 (A.T. Kearney, 1988). This unit was eliminated from further investigations based upon data presented in the VI [URS Greiner Woodward-Clyde, 1999]. SWMU did not process hazardous wastes.

#### **SWMU-11 Waste Solvent Tank**

SWMU-11 consists of a 1,000-gallon horizontal tank located in the incinerator building. The tank receives solvent decanted from the esterification water tank (SWMU-2). Solvent was formerly incinerated on-site in SWMU-1. However, this practice ceased in 2000, and piping used to transfer solvent to the incinerator has been removed as part of the permit closure in 2004. All spent solvent currently received by this unit is transported off-site for treatment and disposal as a D001 hazardous waste. SWMU-11 remains an active HWMU since the facility is classified as a LQG.

#### **SWMU-12 Former Waste Solvent Tank**

SWMU-12 consisted of a steel tank utilized to collect spent solvents from the kettle room prior to incineration in the former incinerator. The tank was formerly located in the area currently covered by the concrete cap (A.T. Kearney, 1988). The Former Waste Solvent Tank was removed in 1981. SWMU-12 was evaluated in the RFI as SA-1 and is currently included within the site wide groundwater monitoring program.

#### **SWMU-13 Railcar Unloading Station and Spill Sump**

SWMU-13 includes the area just south of the railroad spur where raw materials are unloaded. A 500-gallon sump is located within the railroad unloading station to prevent the release of styrene, glycol, maleic anhydride and phthalic anhydride. The rail spur has been in operation since 1971 and the spill sump was installed in 1983 (A.T. Kearney, 1988). SWMU-13 does not process hazardous wastes, and in fact, has never received any spilled material. This unit was eliminated from further investigation based upon data presented in the 1999 VI report [URS Greiner Woodward-Clyde, June 1999].

#### **SWMU-14 Former Loading Area Hose Rack**

SWMU-14 was used to store hoses for loading resin tank trucks. It was designed to allow excess resin from the hoses to drip onto a concrete pad. Gelled drips were collected and land-filled off site, while liquid waste was collected on the truck-loading pad and subsequently drained to the contaminated water catch basin (A.T. Kearney, 1988). The unit has been removed and has not been replaced since the entire loading area is within spill containment of the truck-loading pad. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-15 Former Truck Maintenance Area Hose Rack**

SWMU-15 was formerly used to store hoses used for unloading resin tank trucks while the trucks were being cleaned. Gelled polyester resin was reportedly noted on the ground at this unit. Soil containing oil and resin drippage was excavated during remedial action at Cleanup Area 8 and was placed in the capped soil landfill (SWMU-23) (A.T. Kearney, 1988). The unit was removed prior to the VI and never replaced since truck-washing activities were eliminated in 1990. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-16A Tank Truck Wash Area**

SWMU-16A is a concrete pad that was historically used as a truck wash staging area. Truck washing operations at the facility reportedly began in 1974. Wash water generated at the truck wash area was discharged at the Former Tank Truck Wash Discharge Area (SWMU-16B) until 1981. Prior to constructing the pad in 1983, the contaminated soils were excavated from this area and placed in the capped soil landfill (SWMU-23). The drainage for the pad was piped to the oil/water separator (SWMU-17), which subsequently discharged to the contaminated water catch basin (SWMU-20) (A.T. Kearney, 1988). Operation of SWMU-16A was discontinued in 1990. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-16B Former Tank Truck Wash Discharge Area**

SWMU-16B was the discharge point for truck wash rinse water between 1974 and 1981. The rinse water was conveyed to this area via a 4-inch pipe and discharged to the discharge trench that leads to the Banister River. SWMU-16B stopped operating in 1981 (A.T. Kearney, 1988). In 1983, the pipeline from the truck wash area was reconfigured to connect to the contaminated water catch basin (SWMU-20). This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-17 Oil-Water Separator**

SWMU-17 was used to separate oil and insoluble materials from the truck wash rinse water. The rinse water was then conveyed to the Tank Truck Wash Discharge Area. SWMU-17 ceased operation in 1983 (A.T. Kearney, 1988). In 1992, SWMU-17 was abandoned in-place by filling with concrete during a site wide UST closure. This closure effectively disconnected the truck wash area (SWMU-16A) from the contaminated water catch basin (SWMU-20). This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-18 Truck Wash Holding Tank**

SWMU-18 was located indoors and contained recycled batches of tank truck wash water consisting primarily of a caustic water solution. Wastewater was discharged to the contaminated water catch basin (A.T. Kearney, 1988). Although SWMU-18 still exists, it was taken out of operation in 1990, when the facility ceased truck-washing operations. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-19 Eight Hundred Gallon Holding Tank**



SWMU-19 consists of an underground storage tank used to temporarily contain rinse water from the Tank Truck Wash Area. Under normal circumstances this SWMU was by-passed, and was typically only used to collect a sample of the rinse water. The holding tank was installed in 1974 and was last used in 1981 when the SWCB issued a "Cease Discharge Order" to the facility (A.T. Kearney, 1988). This unit was eliminated from further investigation based upon data presented in the 1999 VI report [URS Greiner Woodward-Clyde, June 1999], and never managed hazardous wastes.

#### **SWMU-20 Contaminated Water Catch Basin**

SWMU-20 is a 25,000-gallon concrete catch basin located east of the incinerator in which contaminated water from several areas of the plant is collected. SWMU-20 is currently in operation and the water stored here is transported by tanker truck to the City of Danville. R.O. Harrell Trucking of South Boston, VA handles all truck transportation for the facility, including transport of catch basin water. Water is transported in 5,500 gallon tankers, approximately once per day. Overflow from SWMU-20 is designed to go into the adjacent non-contaminated catch basin for containment (A.T. Kearney, 1988). This unit has never managed hazardous wastes.

Data presented in the 1999 VI Report did not indicate a historical release in this area (designated Sample Area-2 with adjacent SWMU-21). Under the RFI an integrity evaluation was conducted on this unit and associated piping appurtenances, and no deficiencies were noted. SWMU-20 requires no further evaluation.

#### **SWMU-21 Non-Contaminated Catch Basin**

SWMU-21 consists of a 25,000 gallon concrete basin located east of the incinerator and immediately adjacent to the contaminated water catch basin (SWMU-20). This unit was originally designed to segregate precipitation from the loading/unloading slab, the blending tank floor, and other areas from potentially contaminated water to allow discharge to the facility outfall. However, in practice this unit has essentially served as a backup basin to the Contaminated Water Catch Basin (SWMU-20), although it does receive steam condensate directly from some areas. Discharges from the storm water catch basin (SWMU-21) to the outfall have never been conducted, and the connection from SWMU-21 to the outfall has been eliminated [Final RFI Report URS Corporation 2007]. All water collected in the non-contaminated catch basin is pumped to the Contaminated Water Catch Basin for subsequent off-site disposal. SWMU-21 has been in operation since 1983 (A.T. Kearney, 1988). This unit has never managed hazardous wastes.

Data presented in the 1999 VI Report did not indicate a historical release in this area (designated Sample Area-2 with adjacent SWMU-21). Under the RFI an integrity evaluation was conducted on this unit and associated piping appurtenances, and no deficiencies were noted. SWMU-21 requires no further evaluation.

#### **SWMU-22 Banister River Discharge Trench (Included within SA-12)**

Under the original construction for this facility drainage swales or discharge trenches were installed to divert storm water away from operations towards the Banister River to the south. The primary ditch begins at Outfall 003 and turns south near Outfall 002 towards the Banister River. A second ditch begins near Outfalls 001 and 004 and connects to the primary ditch near Outfall 002. The primary ditch, between Outfall 003 to the Banister River is typically dry.

The ditch system has been recognized as SWMU-22, and was assessed under Corrective Action as Sample Area 12. Prior to 1981, non-contact cooling water, truck wash and rinse water, and

perched water from the flow through process tank area drained directly to the facility discharge trenches. Boiler blow down, kettle room floor drains, and other facility floor drains discharged to an area northwest of the facility, which drained through what is now the capped soil landfill (SWMU-23), and eventually to SWMU-22. Water from these discharge points, with the exception of non-contact cooling water is now collected in the Contaminated Water Catch Basin (A.T. Kearney, 1988). Samples collected during the VI and RFI were evaluated under both a Human Health Risk Assessment (HHRA) and a Screening Level Ecological Risk Assessment (SLERA). The results of the HHRA indicated that metal constituents did not exceed risk criteria for industrial receptors, and the SLERA determined that ecological risks attributable to the site were negligible. No further evaluation is required at SWMU 22.

#### **SWMU-23 Capped Soil Landfill**

Prior to 1983, SWMU-23 was the location of the Former Incinerator (SWMU-3) the Wastewater Tank Trailer (SWMU-4), the Alcohol Drum Storage Area (SWMU-10A), and the Old Waste Solvent tank (SWMU-12). In 1983, this area became Clean-Up Area 1 (CA-1) and received soils from Clean-up Areas 2 through 9, as well as the Tank Truck Wash Area (SWMU-16A) and, former Landfill No. 2 (SWMU-25). Following compaction of the clean-up area soils from the AOCs and above SWMUs, the area was capped with an approximately 140-foot wide by 190-foot long reinforced concrete cap. The concrete cap is 4 inches thick as shown on Design Drawing 102 in Appendix B of the RFI (Olver Inc. 1983). Shallow wells east, west, and within the cap (SW-1, SW-2, and SW-6) were installed to pump groundwater from beneath the cap and in the vicinity of this unit to the groundwater treatment system (A.T. Kearney, 1988). Prior to its construction in 1983, SWMU-23 was determined by the Virginia Department of Health, Division of Solid and Hazardous Waste Management to not contain hazardous wastes. SWMU-23 was evaluated in the RFI as SA-1 and is currently included within the site wide groundwater monitoring program.

#### **SWMU-24 Landfill No. 1**

SWMU-24 is located at the southwest corner of the parking area behind the truck maintenance garage. Landfill No. 1 has been described by facility personnel as three feet deep by eight feet long and three feet wide and was used to dispose of trash generated by the facility. The materials disposed included two to three truckloads of incinerator ash, empty fiber drums, old hoses, and gelled resin. This unit was eliminated from further investigation based upon data presented in the 1999 VI report [URS Greiner Woodward-Clyde, June 1999], and never managed hazardous wastes.

#### **SWMU-25 Landfill No. 2**

SWMU-25 was located adjacent to the raw material tanks in an area that is now a paved road. Landfill No. 2 was used to dispose of trash generated by the facility. In 1983 SWMU-25 was excavated and placed in the capped soil landfill (SWMU-23) (A.T. Kearney, 1988). For the purposes of the VI, this former unit was added into Sample Area 3. This unit did not process hazardous wastes.

#### **SWMU-26 Tank Farm Drain System**

SWMU-26 consists of perforated drain tile that collects infiltration water and perched groundwater in the Flow-Through Process tank area. The purpose of this system was to control the perched water level in the subsurface tank farm to prevent the tanks from moving due to

buoyancy. This water was conveyed by gravity drain to the Tank Farm Sump (SWMU-27), which in turn would pump the water to the Contaminated Water Catch Basin (SWMU-20). The unit began operation in the 1970s, and was modified in 1983 when the Tank Farm Sump (SWMU-27) was installed.

The in-ground flow-through process tanks above this unit were replaced with an above ground tank system in 2003. However, both the Tank Farm Drain System (SWMU-26) and the Tank Farm Sump (SWMU-27) remain intact following the replacement project. The DEQ considered the tank replacement project to be an Interim Measure subject to RCRA Corrective Action since the tanks were adjacent to the drain system. However, the tanks themselves were not regulated and therefore were not subject to RCRA closure requirements. Thus the Flow-Through Process Tank Replacement Work Plan – Revision 1 dated February 23, 2003, and the Flow-Through Process Tank Replacement Report dated December 10, 2004 were considered component parts of the Phase II RFI Work Plan and Phase II RFI Report, respectively.

Data gathered during the VI and tank replacement project were evaluated as a separate HHRA for Sample Area-3. Risks and hazards identified for this area were within acceptable criteria for industrial scenarios, and the RFI recommended no further evaluation for Sample Area 3. No further evaluation is required at SWMU-26.

#### **SWMU-27 Tank Farm Sump (Included within SA-3)**

SWMU-27 is an in-ground, 100-gallon polypropylene tank that accepts water from the tank farm drain system (SWMU-26). The Tank Farm Sump is located at the base of the slope south of the former flow through process tank farm, at an elevation of approximately sixteen feet below the surface elevation of the tank farm. The sump has hydro-matic pumps that transfer water collected by the system to the contaminated water catch basin (SWMU-20) (A.T. Kearney, 1988). The Tank Farm Sump contains a backup pump in the event that the primary pump fails. SWMU-27 began operation in 1983 and has operated consistently to date. This unit does not process hazardous wastes.

Historically, site related constituents of concern such as xylene, ethylbenzene, and acetone have been detected in the tank farm sump. The RFI concluded that the source of these constituents was not the former flow through process tanks, which are served by SWMUs 26 and 27, but by documented releases from the adjacent former incinerator building, and from perched groundwater entering this area from up-gradient Sample Area 5, which includes Clean-up Area 2. With the removal of impacted soils from the vicinity of the former incinerator building in 2005, the only remaining source of impact to this area is Sample Area 5, which is addressed by the final remedy.

As noted above, the RFI recommended no further action for Sample Area 3, which was accepted by the DEQ. The Tank Farm Sump remains a sample point in the groundwater monitoring program.

#### **SWMU-28 Groundwater Treatment Facility**

SWMU-28 is used to treat shallow groundwater pumped from five of the six shallow pumping wells. The Groundwater Treatment Facility consists of dual granular activated carbon (GAC) filters. Following treatment, the water is delivered to the non-contact cooling water system. Water samples are collected and analyzed for phenols and COD once per month, and reported on the facility's Discharge Monitoring Report (DMR). SWMU-28 began operations in 1982 and is still in operation (A.T. Kearney, 1988). This unit does not process hazardous wastes.

SWMU-28 was originally eliminated from Corrective Action evaluations based upon photo documentation presented in the VI Work Plan. However, the DEQ requested an effectiveness evaluation of this unit under the RFI. The effectiveness evaluation demonstrated that influent concentrations into the GAC met potential surface water discharge standards prior to treatment, and therefore the facility could pursue elimination of the discharge permit. SWMU 28 requires no further evaluation based on data provided in the final RFI Report.

#### **SWMU-29 Scrap Drum Storage Pad**

SWMU-29 is an 80 foot by 20 foot rectangular pad used to store finished product from 1973 until 1983. Subsequently it was used to store drums containing intermediate product or product to be reworked. SWMU-29 is currently in operation (A.T. Kearney, 1988). Secondary containment curbing was installed around SWMU-29 in 2001. Currently, in addition to storing intermediate products, the facility stores raw glycol material, empty (and sealed) glycol drums, empty glycol totes, the facility trash dumpster (covered), cleaned scrap metal from various areas, and drums of cured resin prior to disposal. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-30 Former Gelled Resins Roll-Off Container**

SWMU-30 was a steel roll-off container that was used to store drums of solidified resins prior to disposal off site. SWMU-30 began operating in 1982, but storage of solidified resins in a roll-off container has since been discontinued. (A.T. Kearney, 1988). Gelled resins are currently placed in 55-gallon drums and stored on the Scrap Drum Storage Pad (SWMU-29) prior to disposal. This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **SWMU-31 Septic Tank and Drain Field**

SWMU-31 was the original sanitary septic system constructed with the facility in 1970. It remained in operation until 1990 when it was replaced with a new unit installed on the west side of the facility road. This unit was used to manage wastewater generated from facility rest-rooms and the laboratory sink. Wastewater from the laboratory sink was redirected to the Kettle Room Sump (SWMU-7) following facility spill control upgrades in 1983.

This unit was identified while the RFI was in progress. No specific samples were collected to evaluate this unit. However, the RFI presented an evaluation of impact patterns to determine whether a chemicals possibly released from the laboratory sinks prior to 1983 may have contributed to the releases identified in Sample Area 5. A very detailed evaluation indicated that the samples closest to the sump contained significantly lower concentrations of constituents of concern than areas associated with probable spills. These constituents were as likely to have been released the tank wagon spills associated with AOC-B, which was identified as the primary source of impact in Sample Area-5. SWMU 31 requires no further action based on data provided in the final RFI.

#### **AOC-A Molten Phthalic and Maleic Anhydride Tanks**

AOC-A contains two above ground tanks used to store molten phthalic and maleic anhydrides. AOC-A is located north of the main processing areas. The tanks are heated with steam to maintain the correct viscosity since the material solidifies at ambient temperatures. Steam condensate is discharged to the non-contaminated water catch basin. The tanks are currently in

operation (A.T. Kearney, 1988). Based upon the results of the RFI, AOC-A requires no further action.

#### **AOC-B Clean-Up Area No. 2**

AOC-B (Sample Area 5/SA-5) is located approximately 40 feet west of the boiler room. According to the RFA, Clean-Up Area No. 2 consisted of surface tank wagon oil drips and a styrene resin spill. During the RFI it was determined that the primary unit of concern in Clean-Up Area 2 was a waste solvent tank wagon placed to store solvents used to clean tanker trailers. The unit was in this location from the 1970s until 1981. Solvents collected in the tank wagon would be transferred to the Former Incinerator (SWMU-3). Originally the truck rinse solvent consisted of acetone, but was replaced in the late 1970s with xylene. Releases in this area included surface spills and over fills during transfer of solvents, and a subsurface pipeline failure between the tank wagon and SWMU-1.

Soil from this location was excavated to a depth of 1.5 to 3 feet in 1983 and placed in the Capped Soil Landfill (SWMU-23) (A.T. Kearney, 1988).

During the RFI, AOC-A was evaluated as SA-5. The RFI recommended implementation of an Interim Measure and/or Corrective Measure to address elevated concentrations of COCs in groundwater and soil at the AOC. The recommendation was approved by DEQ, and is part of the final remedy.

#### **AOC-C Clean-Up Area No. 3**

AOC-C is located adjacent to the kettle furnace based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **AOC-D Clean-Up Area No. 4**

AOC-D is located south of the eastern end of the drumming/filtering area. Polyester resin spills and some buried drums were reported here. Twelve to eighteen inches of soil were excavated from Clean-up Area No. 4 and transferred to the Capped Soil Landfill (SWMU-23) in 1983. AOC – D is now covered with a concrete pad (A.T. Kearney, 1988).

This unit was eliminated from further investigation based upon data presented in the 1999 VI report [URS Greiner Woodward-Clyde, June 1999], and never managed hazardous wastes.

#### **AOC-E Clean-Up Area No. 5**

AOC-E is located between the drumming/filtering area and the drum storage pad. This was also the site of SWMU-10B (the Waste Methyl Alcohol Drum Storage Area B). Polyester resin and waste methyl alcohol/water mixtures were reportedly spilled at this site. 1.5 to 3 feet of soil was excavated and placed in the Capped Soil Landfill (SWMU-23) in 1983 (A.T. Kearney, 1988). This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **AOC-F Clean-Up Area No. 6**

AOC-F is located 120 feet north of the Scrap Drum Storage Pad, west of the gravel drive. This was a solvent loading area and contained polyester resin and oil drips. Six to eight inches of soil was excavated and placed in the Capped Soil Landfill (SWMU-23) in 1983 (A.T. Kearney, 1988).

This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **AOC-G Clean-Up Area No. 7**

AOC-G is located near the former fill ports for two former USTs located 60 feet west of the truck maintenance building. Oil stains were reported in this area. Eight to twelve inches of soil was excavated and placed in the Capped Soil Landfill (SWMU-23) in 1983 (A.T. Kearney, 1988). The two USTs were removed and a closure report was submitted by RMT, Inc. in 1992 (RMT, 1992).

This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **AOC-H Clean-Up Area No. 8**

AOC-H is located northwest of the truck maintenance building at the site of the Former Truck Maintenance Area Hose Rack (SWMU-15). Polyester resin drips and oil drips were reported at this location. Six to eight inches of soil was excavated and placed in the Capped Soil Landfill (SWMU-23) in 1983 (A.T. Kearney, 1988).

This unit was eliminated from further investigation based upon data presented in the 1998 VI Work Plan [Woodward-Clyde, 1998], and never managed hazardous wastes.

#### **AOC-I Clean-Up Area No. 9**

AOC-I is located just north of the raw material unloading pad. Raw material rinse water and oil drips were reported in this area. 1.5 to 3 feet of soil was excavated and placed in the Capped Soil Landfill (SWMU-23) in 1983 (A.T. Kearney, 1988).

This unit was eliminated from further investigation based upon data presented in the 1999 VI report [URS Greiner Woodward-Clyde, June 1999], and never managed hazardous wastes.

### **SUMMARY OF ENVIRONMENTAL HISTORY AND INTERIM MEASURES**

From 1981 to present, clean-up activities were completed at several SWMUs and AOCs by the Facility to eliminate impacts to human health and the environment as a result of hazardous materials management practices. Past clean-ups that occurred from 1981 to 1983 included shutdown and replacement of the original facility incinerator, installation of several spill control features, installation of a groundwater pump and treat system, and soil excavation, consolidation, and containment beneath a concrete cap. The clean-up activities performed from 1981 to 1983 were done in accordance with a Special Order (Order) issued by the State Water Control Board (SWCB) on October 2, 1981, which required the Facility to submit plans and specifications for the remediation of any contamination identified via environmental assessment. In 2003, the facility removed its flow-through process underground storage tanks and in 2008 remedial pilot testing utilizing ISCO was performed at AOC B, also known as Sample Area 5 (SA-5). For purposes of this discussion, these clean-up activities are referenced in this Statement of Basis as interim measures. The following is a detailed summary of these interim measures.

#### **Interim Measures Performed Under SWCB Special Order - 1981**

##### **Unit Shutdown and Removal**

In 1981, the former incinerator (SWMU 3), the old esterification wastewater tank trailer (SWMU 4), and the former waste solvent tank (SWMU 12) were shut down and taken out of operation permanently. The former incinerator was used to incinerate esterification wastewater, paper, and trash and was removed in 1982. The old esterification wastewater tank trailer was used to store esterification wastewater adjacent to the incinerator and the waste solvent tank was used to collect spent solvents prior to incineration. Additionally in 1981, drums storing waste methyl alcohol intended for incineration at drum storage areas A and B (SWMUs 10A and 10B) were removed permanently. Following the shutdown and removal activities at SWMUs 3, 4, 10A, 10B, and 12, soil from SWMU 10B was excavated and placed in the location of the former incinerator (SWMU 3). Currently the location of SWMU 3 is known as the capped soil landfill (SWMU 23) because this location was used to consolidate excavated soil generated from clean-up activities at other areas identified under the SWCB Order. Subsequently these areas were identified as SWMUs and AOCs during the 1988 RFA. The following sections summarize the activities performed at these areas.

### **Soil Excavation and Consolidation**

In accordance with the SWCB Order issued in 1981, the facility was required to remediate any contamination identified via environmental assessment. An environmental assessment was performed including a hydrogeological study. During this time plans and specifications for the construction of a soil landfill were developed in preparation for soil excavation activities necessary to remediate several SWMUs and AOCs. Subsequently, a release agreement was executed allowing the construction and use of a soil landfill. The soil landfill was constructed on the location of the former incinerator (SWMU 3) and was used to consolidate soil excavated during cleanup activities summarized below.

Soil excavation activities occurred to eliminate risk to human health and the environment through direct exposure and contaminants leaching to groundwater at the following SWMUs and AOCs. These areas described below were eliminated from further investigation following the VI and RFI investigations, with the exception of AOC B, Sample Area 5 (SA-5);

- a. SWMU 15 – Former Truck Maintenance Area Hose Rack – This area was used to store hoses used for unloading resin tank trucks while the trucks were being cleaned. Soil containing oil and resin drippage was excavated (see AOC H description below);
- b. SWMU 16 – Tank Truck Wash Area – A former concrete pad used as a truck wash staging area. Prior to constructing the former pad, soil was excavated. Since then truck washing operations were discontinued in 1990;
- c. SWMU 25 – Landfill No. 2 – This area was used to dispose of trash generated by the facility and is now a paved road. Contents of SWMU 25 was excavated and placed in SWMU 23. This area did not manage hazardous wastes. However, this area was added to Sample Area 3 (SA-3) during the VI; AOC B – Clean Up Area No. 2 – Currently known as Sample Area 5 (SA-5) – An area located approximately 40 feet west of the boiler room and consisted of surface tank wagon oil drips and a styrene spill. Soil in this location was excavated to depths of 1.5 to 3 feet below ground surface (ft bgs) and placed in SWMU 23. This area is currently the focus of active soil and groundwater remediation;
- d. AOC C – Cleanup Area No. 3 – An area located west of the kettle furnace room. This area consisted of surface engine oil drips and floor run-off from the facility. Soil in this location was excavated to depths of 1.5 to 3 ft bgs;

- e. AOC D – Cleanup Area No. 4 – An area located southeast of the drumming/filtering area and consisted of polyester resin spills. Soil in this location was excavated to depths of 1 to 1.5 ft bgs. This area is currently covered by a concrete pad;
- f. AOC E – Cleanup Area No. 5 – An area located between the drumming/filtering area and the drum storage pad. This area also contained SWMU 10B and in addition to the contents of SWMU 10B consisted of locations at which polyester resin and waste methyl alcohol/water mixture spills were reported. Soil at this location was excavated to depths of 1.5 to 3 ft bgs;
- g. AOC F – Cleanup Area No. 6 – An area located approximately 120 feet north of the Scrap Drum Storage Pad. This area consisted of a solvent loading area and evidence of polyester resin and oil drips. Soil in this area was excavated to depths of 6 to 8 inches bgs;
- h. AOC G – Cleanup Area No. 7 – An area located approximately 60 west of the truck maintenance building at which oil stains were observed. Soil in this area was excavated to depths of 8 to 12 inches bgs.
- i. AOC H – Cleanup Area No. 8 – An area located northwest of the truck maintenance building at the same location of the former truck maintenance area hose rack (SWMU 15). Soil at this location in addition to the SWMU 15 was excavated to depths of 1.5 to 3 ft bgs; and
- j. AOC I – Cleanup Area No. 9 – An area located just north of the raw material unloading pad at which raw material and oil drips were reported. Soil at this location was excavated to depths of 1.5 to 3 ft bgs.

As described above, the soil excavated from these SWMUs and AOCs were consolidated in the location of former incinerator (SWMU 3) and is now SWMU 23, the capped soil landfill. During consolidation activities, the soil was amended with fertilizer to stimulate biological degradation of constituents within the soil placed in the landfill. The soil was compacted and graded in preparation of a concrete cap and drainage system. In accordance with approved plans and specifications under the SWCB Order, a concrete cap with a storm water drainage system was constructed on top of SWMU 23, including the locations of SWMU 3, 4, 10A, and 12. The concrete cap is 140 feet wide by 190 feet long by 4 inches thick and captures and diverts storm water to a discharge outfall (Outfall 004), which is managed under a Virginia Pollution Discharge Elimination Systems (VPDES) Permit. The Facility maintains the integrity of this cap and continues to operate the pump and treat system as described in the next section. The maintenance of the concrete cap and the continued operation of the pump and treat system are part of the facility's remedy for RCRA Corrective Action.

#### **Groundwater Pump and Treat System**

During the construction of the capped soil landfill, a shallow groundwater pump and treat system was implemented at the capped soil landfill SWMU 23 and SWMUs 3, 4, 10A, and 12. The pump and treat system was implemented to hydraulically contain shallow groundwater potentially impacted by soil to groundwater transfer of constituents from the capped soil landfill and mitigate down gradient constituent migration off site. The pump and treat system began operation in 1982 and currently includes four active groundwater recovery wells (SW-1, SW-2, SW-3, and SW-6) and an effluent treatment system (SWMU 28) having two granular activated carbon filters and a non-contact cooling system.



The pump and treat system and its recovery wells have been monitored via groundwater sample analysis since implementation. Hazardous constituents have occasionally been detected at concentrations below applicable drinking water standards and current remedial goals. Drinking water standards are established by the maximum contaminant levels (MCLs) promulgated under 40 CFR 141, pursuant to Section 1412 of the Safe Drinking Water Act (SDWA), 42 USC Section 300 ug-1. The 2007 RFI documented that groundwater recovered by the shallow pumping system met applicable discharge to surface water standards prior to treatment. Groundwater monitoring down gradient of the soil capped landfill SWMU 23s, 3, 4, 10A, and 12 indicate continued compliance with current MCLs and Regional Screening Levels (RSLs). Groundwater monitoring down gradient of the capped soil landfill will continue as part of the remedy until 2013. Additional detail on groundwater monitoring is provided in Section 6.0.

Presently, recovery wells SW-1, SW-3, and SW-6 operate continuously. SW-2 may run continuously, but is periodically shutdown at the discretion of the operator to manage the volume of water entering the groundwater treatment system. Other than during groundwater sampling events, SW-4 is not currently in use and SW-5 was abandoned in 2008. SW-1 and SW-3 are down gradient of SA-5. SW-6 is located at the capped soil landfill and SW-2 is located adjacent to the capped soil landfill. The pump and treat system remains in operation as a source of non-contact cooling water and is part of the facility's remedy for RCRA Corrective Action. Operation of the groundwater pump and treat containment system will continue until remedial clean up targets for groundwater are met.

#### **Flow-Through Process Tanks Removal - 2003**

In 2003, CCP completed a removal of their flow-through process tanks. The removal activities were implemented in two phases. The first phase consisted of removing three 30,000 gallon tanks in the western portion of the area. The second phase consisted of removing the five 15,000 gallon tanks remaining. During these phases, approximately 465 tons of soil were excavated, characterized, and transported off site for disposal. Backfill was placed in the excavations and compacted. Following these activities, soil borings were advanced through the fill to collect samples representative of soil beneath the former tank farm. Soil sample analytical results did not exceed industrial screening criteria for direct contact.

#### **In Situ Chemical Oxidation at Sample Area 5 – 2008 to Present**

During the RFI investigation, Sample Area 5 (SA-5, AOC B) was identified for active remedial measures to treat acetone, benzene, ethylbenzene, and xylenes in soil and groundwater including manganese in groundwater. It was determined that xylenes in soil at SA-5 pose an unacceptable risk to human health for a construction worker under current conditions. Additionally, concentrations of acetone, benzene, and ethylbenzene do not support the future beneficial use of groundwater as a drinking water source. Therefore, these constituents plus manganese in groundwater at SA-5 require treatment by the active remediation. Because these constituents at SA-5 are the source of groundwater contamination, the concentrations of these constituents down gradient of SA-5 are expected to diminish by treating these constituents at the source.

Based on the results of the investigations, CCP screened several remedial technologies in 2006 and proposed in-situ chemical oxidation (ISCO) utilizing ozone and peroxide injection. Ozone (O<sub>3</sub>) is a commonly recognized oxidant used in the waste water industry and more recently in soil and groundwater remediation. Ozone has a very short half-life (approximately 20 minutes in an aqueous phase) therefore it must be generated on-site. During its relatively short life span ozone is highly reactive, allowing it to react and degrade other compounds. And since it is applied as a gas, ozone is more readily distributed in the subsurface, particularly the vadose zone.

Ozone reverts to common oxygen once the oxidation reaction is complete, subsequently benefiting aerobic biodegradation of the constituents present in the soil and groundwater. Ozone is particularly efficient in breaking the double-bonded carbon bond found in many aromatic hydrocarbon compounds such as benzene, ethylbenzenes, and xylenes.

The oxidation potential of ozone alone is 2.07 volts (V) and is generally sufficient to breakdown aromatic rings. The addition of peroxide is understood to boost the effectiveness of the technology by the creation of hydroxyl radicals. The hydroxyl radical reaction which has a greater oxidation potential of 2.80 V, is understood to be the controlling factor in the elimination of acetone. Therefore, this method of treatment is improved by using hydrogen peroxide (peroxide) in combination with ozone.

In 2008, a pilot test study was conducted from June to September 2008 at SA-5 in support of a CMS. For pilot test purposes, an ISCO remediation system was constructed. The system utilizes three injection well nests to inject the oxidant mixture into the subsurface. Each injection well nest includes a shallow and deep piezometer. The shallow piezometer targets the vadose zone while the deep piezometer targets groundwater. The ozone and peroxide production system consists of an ozone generator, oxygen concentrator, compressed air system, ozone distribution manifold, hydrogen peroxide metering pump and a hydrogen peroxide distribution manifold. All of the equipment was supplied and packaged into a trailer mounted system by the manufacturer. The ozone concentrator feeds the in-situ oxidation sparger (IOS) units via subsurface tubing, which create micro-sized bubbles of air-encapsulated ozone. Peroxide is metered into a separate IOS unit through tubing from the peroxide metering pump and distribution manifold. The system trailer operates on a 220 volt, 100 amp AC power panel and is equipped with a powered ventilation and air conditioned fan to protect equipment from the weather, and maintain the temperature between 40°-90° F and relative humidity below 80%. Further details regarding system components can be found in the CMS Work Plan dated August 2008 which is included in the Administrative Record.

CCP previously constructed the ISCO injection system in limited size on-site for pilot test study purposes. The system was originally designed to be scaled up in size to treat the entire area of SA-5 and site-wide groundwater following the pilot test, but system expansion was determined to be unnecessary based on the results of the pilot test study. Therefore, there are no plans to modify the system or upscale the system from the pilot test scale. At the approval of VDEQ, the system currently remains operational. The results of the pilot test study are included in the Pilot Test Study Report which may be found in the Administrative Record.

**ATTACHMENT C**  
***REMEDIAL CLEAN-UP TARGETS***

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**REMEDIAL CLEAN UP TARGETS**

**Soil – Remedial Clean Up Targets**

<b>Constituent</b>	<b>Short Term (HHRA) mg/kg</b>	<b>Long Term (SSL) mg/kg</b>
Acetone	NA	140
Benzene	NA	0.13
Ethylbenzene	NA	48
Xylenes	2,700	604

**Groundwater – Remedial Clean Up Targets**

<b>Constituent</b>	<b>Short Term (HHRA) ug/l</b>	<b>Long Term (MCL/RSL) ug/l</b>
Acetone	NA	22,000
Benzene	NA	5
Ethylbenzene	NA	700
Xylenes	NA	10,000
Naphthalene	NA	0.14
Dicyclopentadiene	NA	14
Manganese	7,210*	880

Notes:

**HHRA** = Human Health Risk Assessment: value indicates result of the site-wide quantitative risk assessment performed on soil and groundwater

**SSL** = Site Screening Level for soil to groundwater transfer established by EPA Region III

**MCL** = Maximum Contaminant Levels promulgated under 40 CFR 141, pursuant to Section 1412 of the Safe Drinking Water Act (SDWA), 42 USC Section 300 ug-1

**RSL** = Regional Screening Level for tap water established by EPA Region III, used if no MCL is available

**mg/kg** = milligrams per kilogram

**ug/l** = micrograms per liter

\* = calculated exposure point concentration developed during the site-wide quantitative risk assessment